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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRINKLEY SPRUNT, SCOTT D. RODGERS,
MICHAEL D. CRANFORD and STAVROS KALAFATIS

Appeal 2007-3600
Application 09/751,813
Technology Center 2100

Decided: April 15, 2008

Before JAMES D. THOMAS, JAY P. LUCAS,
and THU ANN DANG, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1, 3, 4, 7 through 9, 18, 20, 21, and 27 through 45. We have jurisdiction under 35 U.S.C. § 6(b).

We Reverse.

As best representative of the disclosed and claimed invention, independent claim 1 is reproduced below:

1. An apparatus, comprising:

a processor to execute a plurality of threads simultaneously, each thread including a series of instructions and resulting in an event;

an event selection control register (ESCR) coupled to the processor;

a first multiplexer coupled to the ESCR to select a class of events, based on a first set of control signals from the ESCR, from a group of event signals issued from the processor,

a second multiplexer coupled the ESCR and the first multiplexer to mask, based on a second set of control signals from the ESCR, subclasses of the class of events in order to select an event that belongs to a subclass that is not masked;

a logic circuit coupled to the ESCR and the second multiplexer to qualify the event based on a thread ID and a thread current privilege level (CPL), the thread ID indicating a source of the event including a thread of the plurality of threads where the event occurred; and

an event counter to count the event qualified by the logic circuit.

The following references are relied on by the Examiner:

Dreyer	US 5,657,253	Aug. 12, 1997
Larsen	US 5,835,705	Nov. 10, 1998
Diepstraten	US 6,205,468 B1	Mar. 20, 2001
	(filing date December 17, 1998)	

All claims on appeal stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the Examiner relies upon Larsen in view of Diepstraten, further in view of Dreyer.

Rather than repeat verbatim the positions of the Appellants and the Examiner, reference is made to the Brief (no Reply Brief has been filed) for the Appellants' positions, and to the Answer for the Examiner's positions.

OPINION

Generally, for the reasons set forth by Appellants in the Brief, we reverse the rejection of all claims on appeal under 35 U.S.C. § 103.

Independent claims 1, 18, 32, and 40 each set forth corresponding features. According to the independent claims an events selection control register feeds data in parallel to a first multiplexer and a second multiplexer according to the features of representative independent claim 1 on appeal that reflects the disclosed features in figure 1. The first multiplexer selects a class of events, also shown in disclosed figure 1, based upon the control signals from the events selection control register. A second multiplexer is coupled to this event selection control register and to the first multiplexer to perform a masking function such as to mask subclasses of the class of events which are derived from the output of the first multiplexer.

Larsen discloses a system similar to that which is disclosed and claimed in that Larsen relates to performance monitoring in a multithreaded processor environment. The performance monitor 50 in figure 1 of this reference is shown in figure 2 in the global mode and in figure 3 in a multithread mode. Figure 3 illustrates events feeding the partitioned multiplexer 82 into two parts, both of which are controlled respectively in parallel by the control register 80, which the Examiner considers to correspond to the events select control register of the claims. Figure 2 of Larsen merely shows a single multiplexer 82 for the global mode which the Examiner considers to be the first multiplexer of the claims on appeal.

Although Diepstraten may be considered to be a performance monitor because it relates to event recording, it does not appear to explicitly teach

operating in a threading environment even though it relates to multitasking environments. The Examiner's reference to figure 3 of this reference and his reliance upon the corresponding discussion at the middle of column 4 (the only portion of this reference relied on) may in fact be interpreted as the Examiner asserting an implied multiplexing function because of the selection operation that occurs from one of a plurality inputs. We do not agree with the Examiner's views that it would have been obvious to have utilized such an events masking functionality in the system of Larsen as asserted to yield the claimed second multiplexer.

As we noted earlier in the opinion, a specific structural arrangement between the first and second multiplexers with respect to the events as well as the events selection control register is recited in the claims, which forms the basic position of Appellants' repeated arguments throughout the Brief that the features associated with the second multiplexer are not taught, apparently even if the teachings of Diepstraten are combined with those in Larsen. Even in view of the multithreading embodiment in figure 3 of Larsen that utilizes split multiplexers, they are effectively not connected in series, while at the same time being commonly connected to a control register, as claimed.

We are not persuaded by the Examiner's rationale in conjunction with the teachings in Diepstraten to modify the structural arrangement of Larsen's figures 2 or 3 to that which is claimed in each independent claim. The Examiner's rationale appears to be based upon prohibited hindsight and not based upon any prospective teachings or suggestions that may be derived from Diepstraten to have convinced us that it would have been obvious for

the artisan to have modified Larsen's teachings and showings in figures 2 and 3 pertaining to his multiplexer arrangements to have added an additional serially connected multiplexer to have yielded the arrangements or connections required by each independent claim on appeal. Dreyer is not argued to nor do we see this reference as curing these deficiencies.

Therefore, even if we assume for the sake of argument that it would have been proper to have combined the teachings of the three respective references, the combination does not appear to us to have yielded the subject matter of the claimed invention, principally as argued throughout the Brief by Appellants. Since we have reversed the rejection of each independent claim 1, 18, 32, and 40, we cannot sustain the rejection of their respective dependent claims. As such, the decision of the Examiner rejecting all claims on appeal under 35 U.S.C. § 103 are reversed.

REVERSED

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